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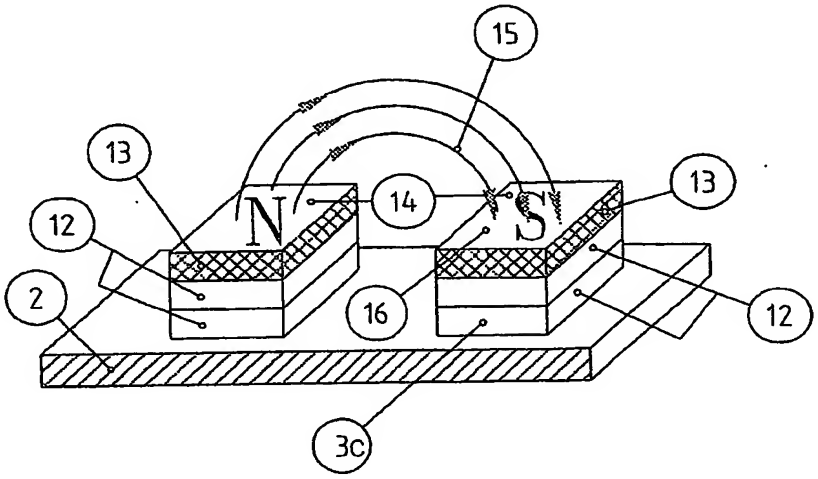
(54) Title: MAGNETIC SEPARATOR WITH FERRITE AND RARE EARTH PERMANENT MAGNETS



(57) Abstract: A magnetic separator with permanent magnets includes a ferromagnetic member (2) for the circuit connection between at least two magnetic poles (3C) made up of ferrite magnets (12) in the bottom portion in contact with said ferromagnetic member (2) for the circuit connection, and of rare earth magnets (13) in the top portion that represents the entrance/exit surface (14) of the magnetic flux lines (15, 16). The ratio between the effective magnetic length of the ferrite magnets (12) and of the rare earth magnets (13) is preferably 2:1, and the preferred materials are strontium ferrite for the former and iron-boron-neodymium for the latter. In this way it is possible to combine the magnetic characteristics of the two types of permanent magnets so as to make them complementary and thus enhance the attractive effectiveness of the separator both for ferromagnetic materials with high or low shape factor, and for materials with high or low and sometimes very low permeability.

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